

A PROGRAM OF DIAGNOSIS  
AND REMEDIATION FOR  
RETARDED READERS WHO HAVE  
BEEN PLACED IN SPECIAL  
EDUCATION CLASSES

CENTRE FOR NEWFOUNDLAND STUDIES

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A PROGRAM OF DIAGNOSIS AND REMEDIATION  
FOR RETARDED READERS WHO HAVE BEEN  
PLACED IN SPECIAL EDUCATION CLASSES

by

Mary Lyons Hicks

An Internship Report submitted in partial fulfillment  
of the requirements for the degree of

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#### ABSTRACT

The purpose of this internship was to ascertain whether some students had been placed in special education classes mainly because of a disability in reading which could be corrected.

The subjects of the study--three girls and seven boys ranging in age from ten to fifteen years--were randomly selected from two special education classes at St. Teresa's School, St. John's. All students in the group were unable to cope with the routine of the regular classroom where they had experienced failure and frustration.

The initial step in the diagnostic-prescriptive teaching program was to find each student's reading level using the Slosson Oral Reading Test. Following this, the Wechsler Intelligence Scale For Children was administered to obtain each child's IQ. The information contained in the subtests of the Verbal and Performance Scales was used to pinpoint weaknesses and to find strengths on which to base the remediation process. The Bond and Clymer formula was then used to find each student's reading potential. These results revealed that the range of reading retardation was from 1.8 to 6.0 years. Diagnostic reading and spelling tests were also administered. After determining in which



abilities. students were weak, the intern focused prescriptive teaching on the whole group, on small groups, and on individuals, on the basis of students' needs.

Because of past failures and frustrations, the students had acquired a poor self-image. As the program progressed, however, weaknesses were corrected and the students experienced a measure of success. They became more motivated to pursue their areas of interest in the wide range of high-interest low-vocabulary books which were available.

A marked improvement was evident, not only in their progress, but in the general attitudes and behavior of the subjects. As a result of their overcoming specific handicaps, the students became more motivated to learn.

The remediation process extended over a period of eight weeks. At the end of this period the students were retested and a t test was performed on the results. The observed differences were significant, indicating that the diagnostic-prescriptive program had been a success.

## CHAPTER I

### STATEMENT OF THE PROBLEM.

Educational administrators, classroom teachers, and parents have been baffled about what to do with children who have failed to adjust to or cope with the demands of a regular school system. While each child's problem is strikingly different, the common denominator is failure or frustration in the regular classroom. Because these children are considered problem children, they are usually placed in a special class. Special education classes were initially proposed with the intention of meeting the needs of children, who, because of some physical or mental disability, were unable to benefit from normal classroom instruction.

These problem children are commonly referred to as exceptional children. The largest percentage of exceptional children falls into the following categories: (1) those whose IQ falls from one to three standard deviations below the normal; (2) those with specific learning disabilities; and (3) those with behavior problems.

Kirk (1972:5) notes many kinds of exceptionalities, but in his definition concentrates on educational exceptionality:





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There is lack of agreement about etiology, definition, incidence, and treatment of special learning disabilities. The child with a learning disability, however, is one who manifests an educationally significant discrepancy between his apparent capacity for language behavior and his actual level of functioning. Reading is one facet of language, and a reading disability case is an individual who is achieving significantly below his capacity.

Within the broad concept of learning disabilities, at least three major subcategories can be delineated, and Bateman (1971:293) describes these as follows:

... reading disability, is perhaps the most frequent of all types of learning disabilities or language disorders.... A conservative estimate is perhaps five to ten percent of the school population have severe enough reading problems to require special educational concern and provisions....

Verbal communication disorders, or difficulties with the comprehension or expression of spoken language, have been labelled aphasic disorders in the past.... The term "verbal communication disorder" is used here to designate those children whose comprehension or expressive language problems involve the spoken word.

Visual-motor integration problems have been widely noted, often in conjunction with reading problems.

At present special education classes cater to children with numerous learning disabilities. This intern feels that isolating the child with others thought to have similar characteristics far too easily leads to derogatory social and self perceptions, which in turn adds to the

child's handicap. The needs of exceptional children are extremely varied and heterogenous. They do not fit into a homogenous model. Thus the child with a specific learning disability, such as a retarded reader, should never be placed in such a special class.

It is feared that many children found in special education classes suffer primarily from a reading disability and probably this reading disability is the cause of the low IQ score obtained on one of the more popular individual intelligence tests currently used to diagnose students for special education classes. The Wechsler Intelligence Scale for Children (WISC) is the test most commonly used. Appendix B contains a review of recent research concerning the relationship between the subjects' performance on the WISC subtests scores and reading abilities or disabilities.

Backward readers are not necessarily mental retardates. Cronin (1965:108) explains:

It is possible, and even plausible, to link low intelligence and reading incapacity in a certain number. Yet for others an apparent lack of ability to learn symbolically may be due to other causes.

Retarded readers make up a sizeable percentage of the school population. Zintz (1966:9) states the following:

Harris indicates that between 10 and 15 percent of the elementary school children have at least mild reading disabilities. Adams, Gray, and Reese cite an even higher figure.

Love (1974:45) states that reading is one of the most important skills that a child will ever develop; however, he says, "In the school systems of America we often say that 40 to 50 percent of children have a reading deficiency at various grade levels."

It is the opinion of this intern that many of those retarded readers eventually find themselves in a special education class. It is with those backward readers that this internship will deal specifically.

#### BACKGROUND OF THE STUDY

In Newfoundland, special education classes have been growing in leaps and bounds since 1969. The number of such classes had grown from one in 1949 to 400 in 1972. The Schools Act 1969, Section 13, Paragraph "p", states that every school board may "establish special classes of instruction for children who are, for any physical, or mental cause, unable to take proper advantage of the regular school courses of study." Some classes, however, had been organized five years previous to this. By 1972, thirty-three out of thirty-four school boards had made provisions for at least one class.

Morgan (1975:17) summed up the present situation concerning special education:



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At present, there are about 600 special education classrooms in Newfoundland and Labrador. If one presumes an average of ten children in each class, there are now 6,000 children being accommodated in terms of modified teaching methods.

Various studies have attempted to determine the number of exceptional children in the general population. The greatest problems with estimating the incidence of exceptional children are those of terminology and criteria, especially in the categories of emotional problems, and specific learning disorders. The exceptional child considered here is one whose problems can be seen as relatively mild--those children traditionally labelled as educable mentally retarded, emotionally disturbed, behaviorally disordered, educationally handicapped, learning disabled, or brain injured. The one common characteristic among all these children is that they have been referred from regular classroom programs because of some sort of teacher-perceived behavioral or learning problem.

One Million Children, the report published by the Commission on Emotional and Learning Disorders in Canadian Children (the CELDIC report) states that 1.2 million Canadian children have emotional and learning disorders. The report also states that most frequently quoted figures suggest that 10 per cent of the school age population have specific learning

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disorders, but some estimates run as high as 25 percent. In discussing the incidence of exceptionality in different areas, the CELDIC report (1970:51) cited this example:

During our field visits, we were told in one community that as many as fifty per cent of the children had a learning disability, meaning that they were needing some special attention from the teacher, while in another community the educational administration told us there were no children with learning disabilities, meaning there were no special facilities and therefore no children with problems. The true answer probably rests somewhere between the two extremes.

In commenting on the number of exceptional children receiving help, the report (p. 59) states:

Perhaps the best we can say at the moment is that in any school age population in Canada, the probability is that somewhere between two and three per cent of the children are in full time special education placements, and that teachers, and others, express concern about a further eight to twelve per cent of children whose problems in behavior, self-management or learning are considered to need additional expert help both in and outside the school.

The policy in Newfoundland, as elsewhere in Canada, is to place students with various handicaps into a class in the school. In our special education classes one usually finds children with one or more of the following disorders:

An IQ between one and three standard deviations below the normal.

A communication disorder caused by auditory or visual impairment, a specific learning disability (such as a reading problem).

An emotional or behavior problem.

Bassant (1974:96) explains why this practice is wrong:

Many research studies have revealed that placement of mildly handicapped pupils in special self contained classes has decided disadvantages. These children are categorized, labeled, and segregated.... These categories are admittedly a convenient means of grouping children. However the stigma which results from such placement often makes school adjustment difficult and lasts throughout the life of the pupil.

The use of the category mental retardation makes it convenient to use those special education classes as "dumping grounds", especially for children disadvantaged by poverty, parental neglect, miseducation, emotional problems, specific learning disabilities, physical handicaps, minority group status. Watts (1975:71) says:

Various groups of children with special needs do not receive adequate educational attention and help. These include-

- a. the isolated exceptional child,
- b. the child with specific learning disabilities,
- c. the slow learner/borderline mental retardate, especially when he reaches the years of youth,
- d. children from ethnic minorities,
- e. the severely and profoundly retarded (and their right to education rather than custodial care).

The learning problems of some of these children may stem in a large measure from their familial and cultural setting, rather than from low mental ability. Doubts have been raised about the effectiveness of placing a handicapped child into a segregated special class on the basis of a low IQ. McKenna (1975:5) has this to say on this particular topic:

Intelligence levels are not now assumed to be as constant as many have hitherto supposed. Theories which maintain that a child's mental abilities cannot be improved have been called in question by recent research projects.

These demonstrate how plastic and modifiable intelligence is and how much it depends on experiences particularly in early life: ways of bringing up children, what parents expect of them, the frustrations or deprivations children may feel, how the children's actions affect parents' behaviour and vice-versa, as well as many other complex variables.

The results of intelligence tests, especially with the young and handicapped, hold little value for predicting how a child will develop intellectually in the future. Hence the results of IQ tests are useful in determining a child's mental make-up at a given moment but should not be used to separate children into rigid, permanent mental categories.

Democratic society would agree that education appropriate to each child's needs must be recognized as a basic human right. Education, by its nature, is a deliberate and systematic attempt to influence learning. This means teaching, training, or providing opportunities for an individual to live and contribute to society. Democratic education has an additional obligation: to provide experiences that coincide with individual needs and capabilities. Regarding education, Article 26 of the Universal Declaration of Human Rights of the United Nations is quoted in Living and Learning (1968:11):

1. Everyone has the right to Education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all on the basis of merit.

2. Education shall be directed to the full development of human personality and to the strengthening of respect for human rights and fundamental freedoms. It shall promote understanding, tolerance and friendship among all nations, racial or religious groups, and shall further the activities

of the United Nations for the maintenance of peace.  
3. Parents have a prior right to choose the kind of education that shall be given to their children.

Many children have been placed in special classes on the basis of an IQ score without giving consideration to their social skills, home situations, motivational problems, or educational history. Until recently, the intelligence test score was considered compatible with commonly held views on intelligence. For years intelligence was viewed as stable and unchangeable. Intelligence test scores were usually considered good predictors of how well a student would do in school work. Meyen (1972:22) refers as follows to the dependence on IQ:

Most professionals in the field of mental retardation feel somewhat uneasy about reliance upon IQ in diagnosing retardation, particularly when dealing with borderline cases.... There are few guide lines for determining an impairment in adaptive behavior. As a result, one makes extremely subjective evaluation of "social adequacy", hence, clinicians ignore social adequacy and make the diagnosis on the basis of general intellectual functioning alone.

In assessing a child's abilities or disabilities, the diagnostician must consider the child as a physical organism, functioning in a physical environment, in a psychological manner. Reading is a complex process of the total individual and may involve any or all of these aspects. This intern feels that many of the steps in assessment suggested as follows by Sodhi (1969:28) have not been considered prior to placing children in many of

our special education classes:

Psychological diagnosis must take into consideration such factors as visual and hearing malfunctioning, motor integrity, nutritional and endocrinal factors, school attendance, educational and socio-economic conditions, bilingual situations and subcultural environments.

Robinson in her famous book Why Pupils Fail in Reading states that social and emotional factors stood highest in the list of causes--they are considered to be primary in over 60 percent of the cases.

Psychologists generally assume a theory of multiple causation for reading failures...

Briefly, it can be stated that the diagnostic problem, then, is one of recognizing the underlying psychopathology of which reading disability is a symptom.

Another drawback to children who experience specific learning disabilities has been "the lock-step method" of education which has been fostered in Newfoundland for too many years. The lock-step method means that a pupil is assigned a block of work to master over the ten-month school year. If the pupil shows sufficient mastery of the assigned material, he is promoted at the end of the year to the next grade. The child with a reading problem usually faces failure and frustration in the total school program. An inability to read or to comprehend what is read hampers a pupil's learning.

Many of our children have been lured from reading by parents who show little taste for it. Family reading habits exert an influence on children that usually persists throughout life. Learning is contagious; the child who never, or at least seldom, sees his mother or father read



and is not encouraged to look up information, take part in family discussions, etc., must find it difficult to cope with the demands made on him by the school. In explaining why some children experience reading problems, Bulcock (1976:12) says, "... the less advantaged children tend to do less well in school because their socioeconomic circumstances tend to constrain their opportunities for acquiring and developing verbal and reading precocity."

The reading problem seems to have accelerated since other media of communication have been invented. Before the advent of the radio and television, children spent much of their leisure at-home time reading. Now, however, many children spend most of their leisure time with transistor radios to their ears, watching television, and listening to records or cassettes. Children engage in more away-from-home activities, such as competitive sports, social clubs, movie theatres, etc. The less time a child spends at reading, the less he will develop his reading skills. In commenting on the reading crisis in Newfoundland schools Gushue (1965:3) says, "This problem is a many-sided one, including a shortage of books, lack of library facilities, poor reading habits, and so on."

Considering the numerous causes of learning disabilities which could be corrected, it seems rather unfair to find so many children in special education classes. Andrews (1973:44) comments on the educational

services to the handicapped child:

In spite of our 20th century progress, the social isolation of the disabled person is still as much a part of his handicap as the disability itself, and notwithstanding our best intentions, many of the efforts which have been made in society today to alleviate the disadvantages encountered by disabled people have unwittingly provided a backlash to their social acceptance.

Eric Haughton, during a recent address given at Memorial University to special education teachers, said that Newfoundland was using the wrong approach in the education of exceptional children. He spoke out against removing an exceptional child from a regular classroom and placing him in a special, segregated class. Haughton (1974:4) commented as follows on such segregation, "... it can have serious social and academic effects upon the child." Other delegates also expressed concern over the fact that while other Canadian associations dealing with the education of exceptional children were moving away from the idea of segregated schools and classes, the trend in Newfoundland was still to provide separate and segregated programs for these pupils.

The intern agrees that the present practice is wrong, and that special education classes should not be used as dumping grounds for children who have problems or difficulties. She also feels that too many children who are merely retarded readers are found in special education

classes and thus lose many of the advantages of the regular classroom.

### LIMITATIONS

As with any study of this nature there are limitations but the intern believes the following to be the most important:

1. Because some of the students in this sample have been in a special education class for one or more years they were more difficult to motivate than children in a regular class.
2. Since there are no alternate forms of the reading tests used, the intern had to use the same form for the pretests and the posttests.
3. The degree of difference between the results of the pretests and the posttests was naturally affected by the time limit set by the internship. In spite of this, the intern has found significant differences.

### QUESTIONS TO BE ANSWERED

This internship will endeavour to find a solution to the following problem:

Are there students in this sample who have a reading disability which can be corrected and are therefore wrongly placed in a special education class?

The following questions will aid in finding the answer to the main problem:

1. Are there students in this sample with average or above average intelligence?
2. What is the reading potential of each student in the sample?
3. Will those retarded readers benefit from small group and/or individual instruction?
4. Is there a significant difference between the pretest and the posttest results?

## CHAPTER II

### REVIEW OF RELATED LITERATURE

Early efforts to provide mass education resulted in the development of the common school consisting of a highly structured, rigid, lockstep program with fixed and clearly specified content at each grade level. The idea was that every child should learn the same thing, at the same rate and to the same extent. Those who deviated just did not learn and usually dropped out of school. As the whole education system evolved and became better organized, however, greater concern began to be felt for those who couldn't measure up, and remedial steps began to be sought.

Most of the early efforts to help the deviates and the handicapped consisted of an institutional type care. The deaf, the blind, and the delinquents were among the first deviates to receive this special attention.

The initial purpose for setting up special education classes, both in Canada and the United States, was to provide special programs for all exceptional children. A slow down in the expansion of such programs, however, began to take place in the 1960's. Ronald E. Jones (1971:16) comments thus:

I suppose one of the considerations that brought about the slow down was the rapidly rising costs for special education purposes and, allied with this, was the question of whether we were getting our money's worth out of it. But perhaps the biggest thing was the suspicion of some people that at least some of the special education programs were doing their customers more harm than good.

Love (1972:15) quoted Blatt's feelings on the subject of "regular" versus "special" classes:

In a rare moment of candidness, a distinguished special educator recently remarked, during a meeting in which this writer participated, that special education isn't special nor can it, in many instances, be considered education. Studies that find that, insofar as measurable abilities are concerned, mentally handicapped children in special classes are very similar in development to those in regular grades. In fact, the earlier studies of Bennett and Rertch found that retarded children in special classes did poorly in physical, personality, and academic areas as compared with retarded children in regular classes. Later studies by Blatt and Cassidy found few significant differences between those children in regular classes and those children in special classes. Notwithstanding the many obvious and valid criticisms of studies comparing special vs. regular class membership, it has yet to be demonstrated that the special offers a better school experience for retarded children than does regular class placement.

Johnson (1962:66) expressed a similar reaction regarding the effectiveness of special education programs:

It is indeed paradoxical that mentally handicapped children having teachers especially trained, having more money (per capita) spent on their education, and being enrolled in classes with fewer children and a program designed to provide for their unique needs, should be accomplishing the objectives of their education at the same or at a lower level than similar mentally handicapped children who have not had these advantages and have been forced to remain in the regular grades.



The Council for Exceptional Children (1971:4) issued the following policy statement regarding the objectives of this special education:

The purposes of special education are no different from those of the regular education in a democratic society. The focus is on the individual and his optimal development as a skilled, free, purposeful person able to manage himself in an open society . . . .

Lloyd Dunn (1968:5) raised the question of the value of the programs and said that most of the children in special education classes, especially those children with mild to moderate learning problems, should be in regular classes in regular schools. He also quoted research by (1964), Hoelke (1966), and Smith and Kennedy (1967), which indicated inconclusive results for children in special classes and stressed that the social stigma and negative attitudes surrounding much of special education more than offset any of the claimed advantages of the programs. He clearly pointed out that much of the research concluded that handicapped children who remained in regular classes achieved as well as those placed in special classes.

McCarthy (1969:35) expressed the following opinion concerning the training of handicapped children:

Each year that a learning handicapped child is denied the services that are presently available to others, that child is being denied his right to equal educational opportunity. No argument, however well phrased, can avoid this

conclusion. To the extent that failure of the Congress to act now (on the Children with Learning Disabilities Act of 1969) deprives even one child of the utilization of his learning capabilities, Congress is derelict.

Lilly (1970:43) wrote of his dissatisfaction with the practice of placing handicapped children in traditional special education classes thus:

It is the opinion of this writer, based upon consideration of evidence from many and varied sources, that traditional special education services as represented by self contained special classes should be discontinued immediately for all but the severely handicapped.

Living And Learning, commonly known as the Hall-Dennis report (1968:106), states:

One may question the wisdom of establishing separate special classes for children who display the kinds of behaviour thought to constitute a specific syndrome.... It is not desirable that any children should think of themselves as a class apart.

Jones (1971:16) wrote the following on special education classes:

A newspaper report of the Council for Exceptional Children's convention in September '68 carried the headline "We should stop segregating Handicapped Students". Four experts (a part of the team which produced the CELDIC report) were quoted as saying "Special Education as we have known it is dead, is obsolete and is finished."

The implications of segregation was the topic of a conversation with Dr. Wolf Wolfensberger, a professor in the Division of Special Education and Rehabilitation at Syracuse University, and Jordan (1974:207) quotes

Dr. Wolfensberger's reactions as follows:

With as much segregation and dehumanization as we have going on, and with as much devaluation of weak people, or marginal people, I think that we have to reorient ourselves much more fundamentally to remoralization rather than merely towards better technology, more money, better gimmickry and so on.... We are dealing with human beings, so we need much broader training towards this whole issue of devaluation, rejection, and isolation.

Olshansky, et al. (1971:82) disagree with the use of the present term of "mental retardation" to categorize many children who are not achieving and have no brain damage:

... the label of mental retardation produces unhappy consequences for many of the children so described, reducing their self confidence in their learning abilities and discouraging efforts in behalf of these children as well as research into their learning problems ...

Some of the consequences of locating the school learning difficulties within the minds of these children are to limit efforts in their behalf as well as to persuade the children and some of their parents and peers that they are "dumb" rather than different.

Concerning special education placement, Safran (1971:37) commented as follows on the reaction of the "peer" group:

Whenever one considers the removal of a youngster from his regular classroom and segregates him into a special class, one must take into consideration the "peer" group pressures which are always present.

Kendall (1971:98) described the attitudes and the behaviour of the "normal" towards the "exceptional":

They tease them. They make fun of them. Children are very cruel.... Both groups are likely to grow up with rather fixed attitudes towards themselves and the others. In this case the expedient solution - separation - has almost certainly made things worse.

With reference to the attitudes of the community as well as the peer group, Sodhi (1972:1) said:

As a result of these attitudes, special educators have advocated and practised the segregation of severely handicapped children into classes which were given a disability label.

This labelling and categorization has been extended to children with milder degrees of exceptionality.

Researchers, particularly sociologists have found that words such as "defective", "disabled", "retarded", "impaired", "disturbed", "disordered", and "disadvantaged", when attached to children with special needs, produce unfortunate results in both the children and the community's attitude toward these children.

Love (1974:14) quotes Reynolds, et al. on the abuse of labels in educational decision-making thus:

Reynolds et al. (1971) indicate that because special educators deal with children who have unusual needs and unusual school programs they become particularly vulnerable to negative community valuations. Various terms, such as disability, retarded, disturbed, learning disorders easily become stigmatic and when attached to children often have unfortunate results. Reynolds et al. (1971) state, "Problems are magnified when the field organizes and regulates its program around classification systems which define categories of 'defectives' or 'impaired'." Sometimes the schemes are more oriented to classification according to etiology, prognosis, or needed medical treatments than to education. At worst simple psychometric thresholds are allowed to become pivotal considerations in educational decision-making.

Love (1972:14) had this to say about special education as an isolated approach for handicapped children:

The people in special education have isolated themselves through the continuation of self-perpetuating interests and also because of the protective attitudes of special educators. Special education should not be considered an isolated approach for handicapped children. In all probability, if individual differences were truly met in the regular classroom, there would be no need to utilize the term 'educable mentally retarded'.

Stott (1974:4) warned of the dangers of labelling children "mentally retarded" or even "exceptional" at an early age. He explained that often the child's development and learning capabilities improve during adolescence, but he says, "The label can never be removed."

Once children are placed in special classes they assume disability labels. Rosenthal and Jacobson (1966) set out to determine whether or not the expectancies of teachers influenced pupil progress. They worked with elementary teachers and children in the first six grades. Pretest measures were obtained by using intelligence and achievement tests. A sample of pupils was drawn and labelled "rapid learners" with hidden potential. Teachers were told that these students should make noteworthy intellectual and school progress during the year. Late in the school year all of the students were retested. The results according to Rosenthal and Jacobson (1966:115) were, "Eight months later these 'unusual' children (who had

actually been selected at random) showed significantly greater gains in IQ than did the remaining children in the control group." We can infer from this study that to label a child "handicapped" or "special" reduces the teachers' and parents' expectancy for him to succeed.

More important than teachers' and parents' expectancies for the child, is the consideration of the effects of labelling on the child himself. Meyerowitz (1967) indicated that special class placement, instead of helping a child with a problem to adjust to his neighbourhood and peers, actually hinders him. His conclusions indicated that removing a handicapped child from the regular class for special education probably contributes significantly to his feelings of inferiority and problems of acceptance.

On the subject of labels, Bessant (1974:96) says:

.... that placement of mildly handicapped pupils in special self contained classes has decided disadvantages. These children are categorized, labeled, and segregated.... These categories are admittedly a convenient means of grouping children. However the stigma which results from such placement often makes school adjustment difficult and lasts throughout the life of the pupil.

Childs (1974) in reflecting on the inappropriateness of special class placement for mildly retarded children says that self-contained placement cannot be justified in a school program. He says that other educators (Christopolos and Renez, 1969; Deno, 1970; Dunn, 1970; Dunn, 1968;



Johnson, 1962; and Lilly, 1970) feel the same way. Blatt (1960) points out that no supportable evidence of advantages of special classes for this type of child has been established. In his criticism of labels, Childs (1974:179) says:

Many feel that ability segregated classes have detrimental effects on the feelings of exceptional children about themselves and of others toward them (Billings, 1963; Meyerowitz, 1962; Rapier, Adelson, Carey, and Croke, 1972). Other critics have also pointed out that special class placement has a debilitating effect on the social-personal adjustment and self image of the children in these classes (Borg, 1966; Meyerowitz, 1962, 1965, 1967). Special classes have also been criticized in light of the effects of poverty and race upon classification as educable mentally retarded (Atkinson & Barksdale, 1971; Dunn, 1968; Johnson, 1962; and Lilly, 1970).

A survey of the prevalence of mental retardation in pre-school and post-school age children was done in Onondaga County by the New York Department of Mental Hygiene (1955) and the results were as follows: under age 5 the rate was 12 per 1,000; at age 5 the rate was 22 per 1,000; at age 6 the rate was 40 per 1,000; from age 10 to 15 the rate was 80 per 1,000; for ages 16 and 17 the rate was 28 per 1,000; and for age 18 and over the rate was 4 per 1,000. From this study it is clear that children considered by the school as retarded can function normally before age 5 and over age 18, but they have trouble functioning during the years in between, which are primarily school years. It is evident from this study that mental



retardation is, as special educators think, an artifice of the education process. The study revealed that educators diagnose and label many children differently and place them in special classes while at the same time they can cope as normal human beings in their communities. The majority of pupils who find themselves in special classes probably suffer from a specific learning disability.

Reynolds (1971:425) expressed this view regarding the current methods used for placing children in special education classes:

Unfortunately, it is not uncommon for handicapped children to be put into special education facilities by processes of rejection by regular schools and classes or by simplistic testing-categorizing methods, rather than by careful placement decisions which seek to optimize benefits for the child. When no options exist as so often is the case when planning for both the handicapped and the gifted, or when decisions about children are made poorly, there is denial by education authorities of the fundamental tenet of democratic society and of free public schools. Clearly, the need is to see the school as a whole and in all its parts as a resource for children in which placements are made for valid educational reasons.

Dunn (1968:5) also wrote the following on the manner in which general educators refer children to special classes:

In my view, much of our past and present practices are morally and educationally wrong. We have been living at the mercy of general educators who have referred their children to us. And we have been generally ill prepared and ineffective in educating these children. Let us stop being pressured into continuing and expanding a special education program that we know now to be undesirable for many of the children we are dedicated to serve.

The CEEDIC report in One Million Children (1970:146) makes three specific recommendations regarding special education classes:

That because of the negative effects of separate educational facilities, educational authorities minimize the isolation of children with emotional and learning disorders and plan programs for them that as far as possible retain children within the regular school curricula and activities.

That educational authorities avoid setting up or maintaining terminal special classes except for very small numbers of multiple handicapped or severely retarded children.

That classroom organization be flexible to permit the child with an emotional or learning disorder to receive special instruction or treatment outside of the classroom and return to it at any time as a member in good standing.

Since the slow down of the expansion programs in the 1960's, the aim of which was to provide a special program for all exceptional children, the policy has been to place students with various handicaps into the one special class in any given school. In most schools, according to Taylor, et al. (1972), the trend has been to group the learning disabled, mildly retarded, emotionally disturbed, and children with other types of handicaps, together in the same classrooms with teachers who have been prepared to deal with a variety of learning and behavior problems. In such classrooms, children with reading problems may work side by side with mentally retarded children or children with psychiatric problems. Children with the learning problems may be taught with

materials and techniques devised exclusively for the other two types of children.

Clinical studies have revealed connections between the child's emotional pattern and his reading proficiency.

Strang (1967:35) states:

Among children with serious reading problems one finds a few who are emotionally healthy; some who are very inhibited, but otherwise are well adjusted; some who have various personality disorders; some whose behavior is definitely delinquent; and a few who are pre-psychotic or psychotic. In short reading disability is found in combination with all degrees of emotional health.

It has not yet been determined whether the reading problem has caused the child to be emotionally disturbed or vice versa. Regardless of which problem arises first, we as educators have to struggle with both problems. Many children suffering from emotional problems have a tremendous ability to upset, disorganize, and create near chaos in any classroom. Frequently these children have been removed from the regular classroom and have been placed in special education classes. Love (1972:225) says:

Too often, however, children are placed in special education classes because they are rejected by regular teachers in regular classrooms and also because they are troublemakers. Too often we see a class of so called educable mentally retarded who are placed together because they are disruptive to the school system. Very often this defeats the very purpose for which special education was designed.

Quay (1968:25) expressed concern over the type of programs offered in special education classes:

Special education classes are rarely designed specifically to improve the academic competence of the child by the application of an instructional technology aimed at improving those aspects of the learning process in which the child may suffer a disability.

Education appropriate to each child's needs must be recognized as a basic human right. Living and Learning, the Hall-Dennis report (1968:9), comments as follows on education:

This is the key to open all doors. It is the instrument which will break the shackles of ignorance, of doubt, and of frustration; that will take all who respond to its call out of their poverty, their slums, and their despair; that will spur the talented to find heights of achievement and provide every child with the experience of success; ... that will carry solace to the disordered of mind, imagery to the slow of wit, and peace to the emotionally disturbed ...

Strang, et al. (1967:4) say that "reading proficiency is the royal road to knowledge; it is essential to the success in all academic subjects", while Cronin (1965:107) maintains that:

Reading as the most important tool function in the total school program is related to successful achievement in the verbal skills of speaking, writing and spelling. A deficiency in one area indicates a deficiency in all.

The causal factors of reading disabilities are numerous. There is an interesting analogy in a book edited by William K. Durr (1970:1) where, in one of the papers on the cause of reading difficulties, the author says:

As we examine the literature of causes of reading difficulties, we feel as if we are one of the six blind men who described the elephant. Sometimes it seems as if we had a corneal transplant only to discover that the cause of the blindness is not the clouded cornea. Instead, it is a lesion in the brain that not only interferes with sight but with reason.

The author goes on to say that the blind men were fortunate because they knew they were trying to describe a single animal--an elephant--but we, seemingly, are attempting to deal with a menagerie. Durr (1970:2) further explains: "A Tower of Babel exists about terminology that makes it difficult to know if people speaking and writing about reading difficulties are really communicating." Commenting on the terminology used in describing reading disabilities, Harris (1970:11) says:

Thus depending on who examines him, the same child might be called a case of reading disability or reading deficiency, a retarded reader, an underachiever in reading, a case of developmental dyslexia, specific dyslexia, or congenital word blindness or a case of specific disability.

The one common element among those terms is the agreement that the pupil's progress in reading is unsatisfactory in terms of his potential. Beyond this there is wide disagreement, not only regarding terminology, but also on the significance of various etiological factors and on the appropriateness and efficacy of different methods of treatment.

Regardless of what label is appropriate, it is inexcusable in this day when man has achieved such giant steps in the development of his potential, when many of his accomplishments approach the miraculous, that there should be among us some who cannot read. The reading problem is not always resolved when the child is removed from his regular classroom and placed in a special class. This isolation only leads to derogatory social and self perceptions which in turn add to the child's handicap.



### CHAPTER III

#### METHODOLOGY

#### POPULATION

The subjects for this internship were ten students randomly picked from two special education classes at St. Teresa's School, Mundy Pond Road, St. John's, Newfoundland. The students in these classes ranged in age from ten to fifteen years. Prior to being placed in a special class these students had experienced academic failure and had repeated one or more grades.

#### INSTRUMENTS

The Wechsler Intelligence Scale for Children was used here as the primary tool to obtain a better understanding, not only of each child's intellectual capacity, but also of the underlying causes of his reading disability. The other tests used were: The Slosson Oral Reading Test, The Dolch Sight Word Test, and The Kottmeyer Diagnostic Spelling Test. The Bond and Clymer formula was used to determine each pupil's reading potential.



## PROCEDURES

The WISC was administered to each student to determine his IQ. The WISC consists of a battery of tests, each of which when treated separately may be considered as measuring a different ability, and when combined into a composite score, as a measure of overall (Full Scale) or global intellectual capacity. The test battery is divided into Verbal and Performance test groups, because the author believes they represent different types of intelligence, but because the dichotomy has proved empirically useful. There is a further breakdown of the tests into tests purporting to measure different abilities (see appendix A).

The IQ's are based on scaled scores (tables for which are found in the Manual) derived separately for each age group. This is in keeping with the author's theory of development, which stresses the comparison of a child with chronological age peers. For each test at each age, the distribution of raw scores is converted to a normal distribution with a mean of 10 and a standard deviation of 3. For each child the raw scores obtained on all the tests are converted to scaled scores based on his age group.

The Scaled Scores are summed separately for both Verbal and the Performance tests. The Full Scale Score is the sum of the total scaled scores of the Verbal and

Performance tests. The Scaled Scores on the Verbal, Performance, and Full Scale tests are then converted to IQ scores (tables for which are found in the WISC Manual). The IQ's have a mean of 100 and a standard deviation of 15. Table 1 presents a summary of how each student measured up to the criteria set by the WISC in comparing a child's performance with that of other children.

Table 1

## WISC Results

Verbal	Subject Age	A 11	B 12	C 12	D 15	E 14	F 10	G 13	H 12	I 10	J 14
Information		7	5	4	3	4	7	4	5	6	4
Comprehension		9	8	7	6	7	8	8	10	10	5
Arithmetic		9	7	6	9	8	11	8	7	11	6
Similarities		11	11	8	7	10	11	10	9	12	8
Vocabulary		9	5	7	5	5	8	6	6	6	4
Performance											
Picture Completion		10	5	6	5	7	12	8	5	15	4
Picture Arrangement		8	11	10	6	3	5	5	10	11	4
Block Design		9	9	12	7	6	12	9	7	10	9
Object Assembly		8	7	9	13	10	14	12	8	12	6
Coding		8	10	8	4	6	9	6	9	9	9
Verbal IQ Score		94	82	77	75	80	94	82	84	94	71
Performance IQ Score		90	89	93	79	75	103	86	85	96	75
Full Scale Score		91	84	83	82	75	98	83	83	94	70

The two Verbal subtests on which most of the students scored well below the mean were the Information and

Vocabulary subtests. The Picture Completion and the Picture Arrangement were the two Performance Subtests on which the students scored poorly.

The Slosson Oral Reading Test was next administered to determine each child's reading level (see Appendix A for a description of the test). The test was also used as a diagnostic instrument. The results of this test are given in Table 2.

Table 2

Reading Grade Level Of Each Student

Slosson Oral Reading Test

Student	Age	Grade Level
A	11	3.2
B	12	2.4
C	12	3.1
D	15	2.0
E	14	5.2
F	10	2.2
G	13	2.6
H	12	2.1
I	10	2.1
J	14	3.0

The reading potential and the degree of reading retardation of each student are given in Table 3. The reading potential was determined by using the Bond and Clymer method taken from Della-Piana (1968:41).

$$\text{Reading potential} = [(\text{years in school} \times \text{IQ}/100) + 1]$$

Table 3

## Reading Potential Of Each Student

Student	Age	Reading Level	IQ	Reading Potential	Reading Retardation
A	11	3.2	91	5.5	2.3
B	12	2.4	84	6.0	3.6
C	12	3.1	83	5.9	2.8
D	15	2.0	82	8.4	6.4
E	14	5.2	75	7.0	1.8
F	10	2.2	98	4.9	2.7
G	13	3.6	83	6.8	3.2
H	12	2.1	83	5.9	3.8
I	10	2.1	94	4.8	2.7
J	14	3.0	70	6.6	3.6

The reading potential of the subjects as determined by the Bond and Clymer formula showed a range of reading retardation from 1.8 to 6.4 grades.

The Dolch Sight Word Test (see Appendix A) was administered for the following two purposes: (1) to establish an equivalent grade level and (2) to further pinpoint reading weaknesses. Table 4 contains these results.

Table 4

## Dolch Words Known By Each Student

Subject	Dolch Words Known
A	201
B	181
C	177
D	162
E	217
F	165
G	205
H	180
I	138
J	211

Kottmeyer's Diagnostic Spelling Test was also administered as another aid in diagnosing reading problems (see Appendix A). The results of this test are given in Table 5.

Table 5

## Results of Kottmeyer's Diagnostic Spelling Test And Grade Equivalent

Subjects	Test Results	Equivalent Grade
A	24/32	Fourth Grade
B	25/32	Fourth Grade
C	24/32	Fourth Grade
D	25/32	Fourth Grade
E	32/32	Sixth Grade or better
F	24/32	Fourth Grade
G	29/32	Fifth Grade
H	28/32	Fifth Grade
I	15/32	Third Grade
J	23/32	Fourth Grade



This test provides clues as to the pupil's familiarity with applying phonetic and structural generalizations to spelling. Each spelling that the child has wrong displays a weakness in one of the elements of structural or phonetic analysis.

A profile was made of each child's test results. The remedial program devised grew out of the needs of the individual as determined by the diagnosis. Prescriptive teaching was then done with the group as a whole or with the individual to help each student overcome his difficulties. The program was devised so that each child could proceed in sequential steps, from simple to more complex reading. This remediation program extended over a period of approximately eight weeks. The group met from one to one and a half hours each day.

The following five steps proposed by Dolch (1946) and contained in Zintz (1966:20) were followed when needed to correct weaknesses and to capitalize on learning strengths:

- (1) Go back to where the child is in reading;
- (2) build and speed up a basic sight vocabulary;
- (3) teach self sounding;
- (4) develop comprehension;
- and (5) give much easy practice.

These two further steps suggested by McBroom (1946) and also contained in Zintz (1966:20) were also followed:

"Show the child his progress, and (2) plan for each child to feel confidence and success."

The remedial program was designed to meet the student's needs. If the student demonstrated weakness in visual discrimination in reading, such as substitutions, reversals, and hesitant oral reading, the program concentrated upon word discrimination skills using flash cards, stories compiled from known sight words written on the blackboard, and tape recorded stories. If the weakness was found in the area of word recognition, the program emphasized phonics and word analysis skills and the use of context clues. With the hope of increasing the student's reading comprehension, activities including reading-thinking exercises involving word, sentence, and paragraph comprehension were used.

Many students in the group had developed an understandable distaste for reading and reading related material. Reading had come to mean failure, frustration, and embarrassment, so many of the students tended to avoid reading whenever possible. This attitude, unfortunately, helped compound their difficulties. One of the major tasks encountered in this study was devising ways and means to help the students overcome this negative attitude toward reading. The intern made use of a wide range of high interest-low vocabulary books recommended for retarded readers. Children expressed interest in a variety of topics and these books presented interesting



material within their reading abilities. By experiencing success the children developed self confidence and were motivated to do more reading. The individual and/or small group instruction helped foster this motivation. Besides experiencing success, each student was developing a better self concept. At the same time a structured skills program was being emphasized.

During the remediation process the following skills were taught or reviewed selectively, depending again on the need as determined by the diagnosis. The time spent on teaching each skill depended on the problems posed by the group or the individual.

1. Build a basic sight vocabulary.
2. Teach word attack skills:
  - (a) Visual clues (use of pictures, charts, diagrams, etc., for meaning)
  - (b) Context (or meaning in the sentence)
  - (c) Configuration (the general appearance of the word as an aid to quick recognition and identification)
  - (d) Structural analysis (knowledge of root words, prefixes, suffixes, inflectional endings, syllabication)
  - (e) Phonetic analysis (process of associating appropriate sounds with the printed letter forms, i.e., recognizing consonants,

consonant blends, vowels, and vowel combinations)

- (f) The Dictionary (for meaning, pronunciation, finding a better word, spelling, and sometimes word derivations)

3. Build Comprehension Skills:

- (a) Reading to get general significance (main idea or ideas)
- (b) Noting details
- (c) Making judgments (reading critically)
- (d) Comparing and contrasting
- (e) Making inferences and drawing conclusions
- (f) Evaluation (fact-fiction; fact-hearsay)

4. Develop good study skills:

- (a) Following directions
- (b) Notemaking and outlining
- (c) Summarizing
- (d) Skimming
- (e) Reading to remember

5. Teach locational skills:

- (a) Using dictionary, reference books, etc.
- (b) Using tables of contents, indexes, glossary
- (c) Using locational skills in specific volumes (Desk Encyclopedia, World Almanac, Who's Who, etc.)
- (d) Using maps, atlas, charts, graphs

- (e) Using illustrations, symbols, abbreviations
  - (f) Using footnotes, bibliographies
  - (g) Appraising subject; estimating sources
6. Emphasize appreciation skills:
- (a) Visualizing enriching imagery
  - (b) Recognizing the intent and mood of the author
  - (c) Appreciating literary style, figures of speech

In summary the three basic considerations in remedial reading as outlined by Zintz (1966) were followed:

1. Find out where the child is and help him build security and confidence.
2. (a) Build a basic sight vocabulary.  
(b) Teach word attack skills:
  - (1) Picture and context clues
  - (2) Word configuration clues
  - (3) Phonetic analysis
  - (4) Structural analysis
  - (5) Dictionary skills(c) Build comprehension and evaluation skills.  
(d) Give lots of easy reading practice.
3. Build attitudes toward reading that would help the student accept himself and his problem.

## MATERIALS USED

Skills were taught by means of teacher-made materials, such as oral language activities, creative writing, dramatization, etc., as well as by the use of commercially-produced materials such as the Dolch Sight Words, Phonics - Breaking The Sound Barrier. The Science Research Associates Laboratories, Stott's Reading Programs, learning games, workbooks, stencils, and a wide range of high interest-low vocabulary reading material. A complete listing of skill building materials used are contained in Appendix C.

## CHAPTER IV

### EVALUATION OF THE INTERNSHIP

The WISC was the main instrument used in diagnosing and evaluating the subjects of this internship. On the WISC the IQ of 100 is set equal to the mean or average total score with the standard deviation equal to 15 points. The average range of intelligence, however, is from 90 to 109, using Wechsler's intelligence classification system. The results (see Table 1) show that three members of the group were within the average range of intelligence. Five of the students were more than one standard deviation below the mean and scored within the dull normal range of intelligence (80-90), while two students scored within the borderline range of intelligence (70-80).

The Slosson Oral Reading Test was used to obtain each student's reading level (see Table 2). The intern then obtained each student's reading potential (see Table 3). The Dolch Sight Word Test and Kottmeyer's Diagnostic Spelling Test were also administered for further diagnostic purposes (see Tables 4 and 5).

The prescriptive teaching program, which lasted eight weeks, attempted to correct the weaknesses and to add to the strengths which the children had in reading and

which were revealed in the diagnosis.

At the conclusion of the remediation program the intern again administered The Slosson Oral Reading Test, The Dolch Sight Vocabulary Test, and The Diagnostic Spelling Test. The following tables summarize the results of these tests.

Table 6

Results Of The Slosson Oral Reading Test

Student	Age	Pretest	Posttest
A	11	3.2	4.2
B	12	2.4	3.4
C	12	3.1	3.8
D	15	2.0	2.8
E	14	5.2	5.4
F	10	2.2	3.0
G	13	3.6	4.1
H	12	2.1	2.9
I	10	2.1	3.2
J	14	3.0	3.9

Table 7

A Comparison Of The Pretest And The Posttest Scores  
On The Slosson Oral Reading Test

Mean	Sd	df	t	p
Pretest 23.4	Pretest .99			
Posttest 27.7	Posttest .79	9*	9.28	<.001

\* One tailed test--correlated samples



Table 8

## Results Of The Dolch Sight Words Test

Student	Age	Pretest	Posttest
A	11	201	218
B	12	181	213
C	12	177	216
D	15	162	197
E	14	217	220
F	10	165	216
G	13	205	220
H	12	180	207
I	10	138	197
J	14	211	220

Table 9

A Comparison Of The Pretest And The Posttest Scores  
On The Dolch Sight Word Test

Mean	Sd.	df	t	p
Pretest 183.7	Pretest 24.9			
Posttest 212.4	Posttest 9.03	9*	5.01	<.001

\* One tailed test--correlated samples



Table 10

## Results of Kottmeyer's Diagnostic Spelling Test

Student	Age	Pretest	Posttest
		List 2	List 2
A	11	24	30
B	12	25	32
C	12	24	29
D	15	25	30
E	14	32	32
F	10	24	30
G	13	29	32
H	12	28	30
I	10	15	27
J	14	23	32

Table 11

Comparison Of The Pretest and The Posttest Scores  
On Kottmeyer's Diagnostic Spelling Test

Mean	Sd.	df	t	p
Pretest 24.9	Pretest 4.49			
Posttest 30.4	Posttest 1.63	9*	10.86	<.001

One tailed test--correlated samples

## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### SUMMARY

This diagnostic-prescriptive teaching program extended over a period of eight weeks. The students--three girls and seven boys--were randomly selected from two special education classes. After testing, it was found that the children in the sample were from the borderline, the dull normal, and the normal range of intelligence. Diagnostic reading and spelling pretests revealed that each child was a retarded reader. Following the remediation process, which consisted of diagnostic-prescriptive teaching, posttests were administered and t tests were applied to the results. The statistical analysis showed that there were significant differences between the pretest and the post-test results.

#### CONCLUSIONS

The intern feels that the majority of these students should be in regular classes receiving remedial instruction in a small group setting or, if necessary, on an individual basis. Isolated special education classes should be

discontinued for all except the severely retarded who cannot cope with the regular school system. Children in our present special education classes are denied the opportunity to participate in social activities with their peer groups. The learning disabilities of students found in these classes are so diversified that it is very difficult, if not impossible, for any one teacher to handle adequately the variety of disabilities encountered.

There seems to be no easy answer to the crisis which exists in the field of special education. The trend, however, must be away from segregation. The integration process will in some cases be difficult because of the lack of adequately trained personnel. The success of integration depends on the availability of qualified leaders, resource teachers, and clinical teachers. The money now being spent on special education programs, which research has proven to be outdated and even outlawed in some places, could be better spent by concentrating on diagnostic and prescriptive remediation programs in the late primary and early elementary grades.

## RECOMMENDATIONS

The following recommendations are submitted to ensure that all children may have equal access to the learning experiences best suited to their needs and abilities:

1. That students currently in special education classes be returned to regular classrooms and that a wide array of flexible services, arrangements, intervention, strategies, and support systems be designed to help both the handicapped children and their teachers.

2. That qualified special education teachers be used as resource people. The resource person must be a fully qualified person who could diagnose the child's disabilities and do prescriptive teaching with the child in the resource room, as well as help the classroom teacher in designing educational experiences. Initially the child may have to spend extended periods in the resource room.

3. Concentration must be on the intra-group variability. About the only characteristic on which there is commonality at present is the IQ. It must be recognized that children with the same IQ possess highly dissimilar instructional needs.

4. The diagnostic procedure used for referral purposes must be changed. At present children are referred for specialized services because of learning and adjustment problems. Diagnosis should be made regarding the child's problem and prescriptive teaching techniques recommended to help overcome it.

5. Educators should work with children who have learning disabilities on the assumption that the problems in learning originate more in the motivational than in the cognitive sphere.

6. The focus of attention should be on the early prediction and prevention of possible learning problems. Certain learning problems often occur because of unfortunate environmental circumstances. With early detection, remediation could be a fairly simple process.



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APPENDIX A

SUMMARY OF SELECTED TESTS



The Wechsler Intelligence Scale for Children (WISC) is an individual intelligence test designed to measure intelligence in individuals from ages five through fifteen years. The WISC makes use of the deviation IQ. In it, the child's IQ is determined by comparing each subject's test performance with that of individuals in his or her own age group. The IQ of 100 is set equal to the mean total score for each age group with the standard deviation being set equal to fifteen points.

The WISC consists of twelve subtests which are divided into two subgroups. These subgroups are identified as the Verbal and Performance Scales. The Verbal Tests are: Information, Comprehension, Arithmetic, Similarities, Vocabulary, and Digit Span. The Performance Tests are: Picture Completion, Picture Arrangement, Block Design, Object Assembly, Coding, and Mazes. Ordinarily one administers only ten of the twelve subtests in the entire test scale, with the two remaining subtests--Digit Span and Mazes--being used only when one or two of the other subtests is invalidated. The Verbal Scale is usually administered first and the Performance Scale follows. Each subtest raw score is converted to a scaled score with a mean of ten and a standard deviation of three. In

using the WISC, one is able to obtain a Verbal Scale IQ, a Performance Scale IQ, and a Full Scale IQ, which is a measure of total performance on the two scales.

The WISC is being widely used as a measure of intelligence by teachers and specialists in the area of reading. The personnel in some school systems use it as one of the criteria for placement of retarded readers in remedial reading programs. Consequently, a number of our retarded readers have been given the WISC. It is questionable whether the WISC results have been utilized to their fullest extent.

There are many authorities in the field of reading and psychology who are aware of the diagnostic value of the Subtests themselves. Rapaport (1945:9) made an extensive study of the possible use of the Wechsler Scales in diagnosing emotional difficulties. He states:

In the study of the Bellevue Scale we concentrated upon scatter analysis, believing that to use this test as a mere intelligence test is to neglect the diagnostic potentialities to be found in the dynamic relationship of its subtests to each other.

Over the years since the development of the WISC, numerous statistical studies have been reported on the relation of distinctive subtest patterns to reading retardation. A marked deficiency in any subtest, or pattern or profile of subtests, which is characteristic of retarded readers has diagnostic possibilities. The area

in which the deficiency is indicated may be noted and training provided to increase the individual's efficiency in that area. In doing so, one block to success in reading may be removed. Since the WISC is widely used in reading clinics, it would be desirable and economical to extract from it the maximum of diagnostic information. Wechsler (1958:155) says:

Although the primary purpose of an intelligence examination is to give a valid and reliable measure of the subject's global intellectual capacity, it is reasonable to expect that any well-conceived intelligence scale will furnish its user with something more than an IQ or MA. In point of fact, most intelligence examinations, when administered individually, make available a certain amount of data regarding the testee's mode of reaction, his special abilities or disabilities, and not infrequently some indication of his personality traits.

Diagnostic reading tests are designed and used to determine levels of achievement and to pinpoint weaknesses in the various developmental sequences which constitute reading skills. Causal factors, however, are numerous and difficult to determine. In assessing degree of reading ability, it is not sufficient to consider merely the discrepancy between the child's chronological age and his reading age on some standard measure. It is desirable and necessary to consider also the child's intellectual potential.

The WISC Full Scale IQ, the Verbal IQ, and the Performance IQ are used to identify potentially retarded

readers. The WISC subtest results allow the diagnostician to formulate hypotheses regarding factors that might be contributing to the child's reading problem. A summary of what each subtest of the WISC purports to measure follows.

#### SUMMARY OF THE WISC SUBTESTS

##### INFORMATION

A measure of one's background of general knowledge.

##### COMPREHENSION

A measure of one's capacity to understand and to make practical decisions.

##### ARITHMETIC

A measure of one's arithmetic reasoning.

##### SIMILARITIES

A measure of how one can see points, features, or instances in which things are similar.

##### VOCABULARY

A measure of one's ability to define words.

##### DIGIT SPAN

A measure of one's attention to and immediate recall of auditory stimuli.

##### PICTURE COMPLETION

A measure of one's ability to note essential detail.

##### PICTURE ARRANGEMENT

A measure of one's ability to anticipate outcomes and to organize parts into total situations.

### BLOCK DESIGN

A measure of how one perceives and uses his visual and motor co-ordination to copy abstract designs.

### OBJECT ASSEMBLY

A measure of one's ability to synthesize parts, using concrete stimuli.

### CODING

A measure of one's capacity for new learning involving visual perception, visual-motor co-ordination, and memorization.

### SLOSSON ORAL READING TEST

The Slosson Oral Reading Test is to be given individually and is based on the ability to pronounce words at different levels of difficulty. The words on this test have been taken from standardized school readers and the "reading level" obtained from testing represents median or standardized school achievement.

The test is administered by allowing the child to read from one sheet while the examiner keeps score on another. The examiner starts the child where he can pronounce all 20 words in that list correctly. If the "starting list" is too difficult the child must go back until he reaches a list where he can pronounce all 20 words. Once the "starting list" has been established, the child

must read on until he mispronounces or is unable to read all 20 words. This is called the "stopping list".

To find a child's raw score for reading, the examiner must count the total number of words the student was able to pronounce correctly, including the ones below the starting point. To find the reading level the examiner may then look up the value of the raw score in a table prepared for changing the raw score to a reading level. Another way to determine the reading level is to take half the raw score and call the first number the grade level and the last number the month. That is, if the raw score were 86, half of this number would be 43, and the reading level would be 4.3 or the 3rd month of the 4th grade.

#### THE DOLCH BASIC SIGHT WORD TEST

The Dolch Basic Sight Words are a short list of words which a child should recognize at sight; that is, he should be able to recite these crucial service words automatically once they are presented. These are the commonest words used in all reading and writing. Over half of all the running words children read in their elementary textbooks are made up of these service words. Zintz (1966:43) estimates that the words in the 220 Dolch Basic Word list constitutes more than 60 per cent of all the running words in primary reading materials and about 50 per



cent of all the running words in intermediate grade reading materials.

McBroom, Sparrow, and Eckstien (1946:9) proposed criteria to serve as a basis for computing a child's score as well as providing a means of diagnosing where a student is experiencing difficulties. These steps are summarized below and were used by the intern.

1. The child had to respond in less than ten seconds to the flashed word.
2. Children's responses were indicated in the following way:
  - a. A line was drawn through the word--if properly called.
  - b. "C" was written in front of a miscalled word which was corrected.
  - c. If the word was not corrected, the pronunciation was written above it.
  - d. A skipped or unidentified word was not marked.
  - e. After several guesses, if the child got the answer the pronunciation was written down but a line was not drawn through the word.
  - f. The number of words lined through was the score on the test.

The intern also made note of the following error patterns:

- a. repetitions or regressions
- b. omissions of words or parts of words
- c. vowel and consonant errors

- d. reversals of letters: p, q, b, d, etc.
- e. reversal of words: was, saw, etc.
- f. addition of parts of words
- g. substitution of words
- h. configuration errors: form, from, etc.

#### DIAGNOSTIC SPELLING TEST

Kottmeyer (1959:87) in commenting on the place of spelling in the remedial reading program says:

Because of the close relationship between reading and spelling skills and particularly because much of the phonetic training which is suggested for remedial readers involves the use of spelling activities, some measure of the pupil's spelling power is useful in diagnosis.

The Diagnostic Spelling Test was devised to give a measure of "grade" achievement and also to yield some diagnostic information about phonetic power in spelling. The test was administered to some 20,000 pupils in Grades 1-6 in the schools of the metropolitan St. Louis area after which percentile norms were established. The words in each spelling list were chosen as examples of phonetic elements which appear commonly in the vocabulary of the primary and elementary grades. Some clues to the pupil's familiarity with these phonetic and structural generalizations can be observed by noting how the student spells the words presented.

APPENDIX B

A SUMMARY OF RESEARCH REGARDING THE RELATIONSHIP  
BETWEEN THE SUBJECTS' PERFORMANCE ON THE SUBTESTS  
OF THE WECHSLER INTELLIGENCE SCALE FOR CHILDREN  
(WISC) AND READING ABILITY

Altus (1956) sought to determine whether retarded readers displayed distinctive test patterns on the WISC. His findings were that Coding and Arithmetic subtests were significantly lower than Vocabulary, Digit Span, Picture Completion, Object Assembly, and Picture Arrangement.

Burke (1955) wanted to test the hypothesis that poor readers may be relatively weak in those parts of intelligence tests which reassemble important characteristics inherent in written language. The researchers found that poor readers were significantly low in Information, Arithmetic, and Coding subtests, but significantly high on Picture Arrangement, Block Design, and Comprehension subtests.

Coleman and Rasof (1963) set out to determine whether underachievers show a distinctive pattern of intellectual abilities as reflected on WISC scores. When they analyzed the subtest scores, Coleman and Rasof concluded that underachievers obtained low scores on Information, Arithmetic, Vocabulary, Digit Span, and Coding. High scores were obtained on Comprehension, Picture Completion, and Block Design subtests. The underachievers' scores were significantly higher than the mean scores on the performance scale. The underachievers scored significantly low on the subtests heavily loaded with

school-type learning and concentration and memory factors, but high on those of perceptual organization and incidental learning.

Flanery (1953) studied the pattern of performance on scores of the Wechsler-Bellevue which typifies the retarded reader. The population consisted of 90 retarded readers and 20 normal readers. Flanery concluded that Information, Comprehension, Digit Span, Arithmetic, Similarities, Vocabulary, and Picture Arrangement were the subtests most clearly differentiating the retarded reader. The retarded readers reflected poor memory function, limited conceptual (abstract) thinking ability, short attention span, weak powers of concentration, restricted vocabulary, poor planning ability, and slow psychomotor speed.

Graham (1953) compared Wechsler-Bellevue and WISC scattergrams for underachievers with a pattern reported by Harper for adolescent psychopaths. He found that Arithmetic, Digit Span, Information, and Vocabulary average below the mean, and Object Assembly, Picture Arrangement, Block Design, Comprehension, and Similarities above the mean. Digit Span was usually the lowest performance score, Comprehension and Similarities the high verbal scores. Both groups did less well in areas resembling school learning (Arithmetic, Vocabulary, and



Coding). The score for Similarities was significantly higher than the mean.

Hirst (1960) explored the usefulness of a two-way analysis of WISC subtests in the diagnosis of remedial reading problems. The conclusions were that both groups (severely and mildly retarded) were high in Picture Completion and Picture Arrangement, and low in Arithmetic, Coding, and Digit Span. The severely retarded scored significantly higher on Object Assembly, Picture Completion, and Picture Arrangement and significantly lower on Digit Span, Vocabulary, and Similarities than the mildly retarded. In the mildly retarded group Picture Completion and Picture Arrangement were high; Coding and Arithmetic low.

Kallos (1961) analyzed the WISC profiles of a specified sample of poor readers. He found that Block Design was significantly higher than six other subtests, and Information, Coding, and Arithmetic were significantly lower than at least two other subtests.

Muir (1962) analyzed the WISC profiles of 50 children with severe reading disabilities to determine whether such children show distinct test patterns. An analysis of this data revealed that high subtest scores were Comprehension, Picture Completion, Object Assembly, and Block Design; low were Arithmetic, Coding, Information,



and Vocabulary, with Coding and Arithmetic significantly below the mean, and Picture Completion and Object Assembly significantly above the mean.

Neville (1961) compared the WISC test patterns of 35 matched pairs of retarded and nonretarded readers. From the comparisons the author found retarded readers significantly low in Information, Arithmetic, and Digit Span; significantly high in Picture Arrangement and Block Design. The low scores seemed to be related to school learning related tasks while the high scores were on subtests which test incidental learning. The author feels that students have failed to do well in some areas of the test because of lack of reading ability.

Paterra (1963) studied the WISC scattergrams of 33 retarded readers in an attempt to distinguish areas of strengths and weaknesses. The findings were that scattergrams showed Comprehension, Similarities, and Picture Completion significantly higher than Information, Arithmetic, Vocabulary, Picture Arrangement, Block Design, and Object Assembly. The author concluded that reading should be improved through verbal reasoning rather than through independent vocabulary study, depending on memorization.

Sawyer (1964) investigated the extent to which the subtests of the WISC could discriminate between a group

diagnosed as mildly retarded in contrast with a group diagnosed as severely retarded readers. She found that high scores on the subtests of Arithmetic, Vocabulary, Digit Span, Picture Completion, Comprehension, and Object Assembly contribute to success in reading. These subtests discriminated between the mildly and the severely disabled readers. Severely retarded readers had a significantly higher mean performance IQ as compared with verbal IQ.

Stroud (1957) did a correlation analysis of WISC and Achievement Test scores of 775 students from grades three to six who were experiencing academic difficulty. The author found that the six subtests which contributed heavily to predicting achievement in reading and spelling were Arithmetic, Digit Span, Vocabulary, Block Design, Object Assembly, and Coding.

Roebeck (1964), with 80 reading clinic students, tested the null hypothesis--that reading clinic children show no significant subtest deviation on the WISC. This hypothesis was rejected by the researcher for each of the subtests. Reading clinic subjects, as a group, were found to be high in those verbal areas which involved judgment and the ability to generalize. These children showed relative intellectual weakness in their ability to recall specific verbal material. On the performance tests, these remedial readers tended to deal more effectively with

igural than with symbolic materials.

Frommelt (1964) attempted to determine whether there was a statistically significantly different WISC profile for unsuccessful readers than for successful readers in elementary grades. The results were that the successful reader group was significantly superior to the unsuccessful reader group on the total Verbal Scale of the WISC. The mean differences of the Similarities subtest appeared to be the most significant of the Verbal Scale subtests in distinguishing between successful and unsuccessful reader groups.

Fransella and Gerver (1965) attempted to determine the expected reading age of a pupil from his chronological age and WISC Verbal IQ. They found that the correlation of reading age with IQ increases with advance in chronological age.

McLeod (1965) compared the WISC subtest scores of successful readers (100 boys and 73 girls) with those of unsuccessful readers (85 boys and 31 girls). The findings were that Information, Vocabulary, Digit Span, Picture Completion, and Coding subtest scores were significantly higher for the successful reader group.

Reid and Schoer (1966) investigated the relation of social-class and subtest patterns on the WISC to reading

achievement. The investigation revealed that all social class effects and interactions involving social-class were non-significant. Scores on three Verbal Scale subtests (Arithmetic, Similarities, and Digit Span) and one Performance Scale subtest (Picture Completion) were found to be significantly related to reading.

Belmont and Birch (1966) compared WISC profiles of 50 normal and 150 retarded readers. The comparison showed that the normal readers had significantly higher Verbal Scale than Performance Scale IQ's; the reverse was true for the retarded readers.

Ekwall (1966) attempted (1) to ascertain the WISC subtest profiles of a group of retarded readers; (2) to compare the WISC profiles of bilingual and unilingual retarded readers; and (3) to obtain through case study data and further analysis of test data an understanding of the relation of the WISC scores to reading abilities and to some other factors. Ekwall found that:

(1) the entire group of retarded readers was found to be significantly low on the WISC subtests of Information, Comprehension, Arithmetic, and Digit Span, and significantly high on the subtests of Picture Completion, Picture Arrangement, Object Assembly, and Coding; (2) the bilingual group were significantly higher on the subtests of Arithmetic and Coding, whereas the unilingual group were

significantly higher on the subtests of Information and Vocabulary than the bilingual group; (3) a comparison of the profiles of the eleven readers who scored highest with the eleven who scored lowest on certain reading tests indicated that WISC profiles vary according to the degree of retardation.

McGraw (1966) made a comparison of the mean subtest raw scores on the WISC of regular and over-achieving readers with under-achieving readers. The results were that the subtests of Arithmetic, Similarities, and Vocabulary exhibited statistically significant differences between the two groups, favoring the regular and over-achieving readers.

DeBruler (1967) administered the WISC to two groups of 70 seventh grade children, matched in IQ, age, sex, school grade, socio-economic level, and educational background, but differing in reading ability. He reported that differences in subtest mean scores were found between the two groups in Picture Completion, Arithmetic, Coding, and Vocabulary. Arithmetic, Coding, and Picture Completion were associated with reading disability among boys. Both boys and girls in the retarded reading group were significantly lower in Arithmetic than the reading group. The Picture Completion score was found to be consistently high and Arithmetic and Coding consistently low among

reading disability cases.

Reed (1970) studied the WISC profiles to identify potentially retarded readers. The study showed that good readers surpassed poor readers by 15 points on the Verbal IQ.

Lewis, Bell, and Anderson (1970) compared the WISC subtest scores of two groups of readers--one adequate and one retarded. The results of the comparison were that the inadequate readers scored lower on all subtests except on Object Assembly and Mazes.

Heulsman (1970) contrasted WISC subtest patterns of 100 underachieving and 56 achieving fourth grade readers with those from 20 previously published studies. The author found that underachievers appeared to be characterized by a pattern low in Arithmetic, Information, and Coding. Also 60 percent of underachievers obtained Performance IQ's one or more points higher than Verbal IQ's.

Black (1971) investigated the effects of intelligence (as measured by the WISC) on the level of reading achievement of children with significant reading problems. The results of the investigation were that 55 per cent of the sample received a WISC IQ below 90, 82 per cent had a Full Scale IQ below 100, and only 18 per cent had an IQ above 100.



Hollingshead and Clayton (1971) sought to identify the patterns of strengths and weaknesses on the WISC with average or above average reading ability and also to compare strengths and weaknesses of retarded and non-retarded readers. The authors found that the data showed strengths in the subtests of Similarities, Picture Completion, Block Design, and Picture Arrangement. In the comparison of the retarded and nonretarded readers, the Verbal Scale IQ scores of the retarded group were lower than the Performance Scale IQ scores. The retarded reader group exhibited weakness in the Vocabulary subtest and strengths in the Picture Completion, Block Design, and Coding subtests.

Kender (1972) summarized some of the relevant and recent research to see if any valid generalizations could be made about the WISC profile for poor readers. He concluded that the value of studying averages was questionable, since reporting average scores for poor readers simply obscures individual differences. The author suggested that the focus of research be shifted from studying the performance of groups of poor readers to attempting to understand the implications that the WISC subtests have for the reading process itself.

## CONCLUSIONS AND IMPLICATIONS FOR REMEDIAL READING

Generally, then, we can say that retarded readers score somewhat higher on the Performance section than on the Verbal section of the WISC. The discrepancy between the Verbal and Performance Scales, in favor of the latter, may be due to an inherent lack of verbal ability, to environmental, emotional, or other factors that are inhibiting the functioning of verbal ability; or to other circumstances, such as physiological factors, that have prevented the individual from learning to read.

Apparently, the more diagnostic values are found in the profiles of the subtest scores. These show graphically the patterns of strength and weakness in the individual's mental functioning. Each represents some mental process involved in reading that may be improved by practice and modified instruction.

The studies of the relationship between reading ability and scores on the subtests of the WISC have shown a characteristic pattern for retarded readers. These students tend to score low on the subtests of Information and Arithmetic, and also relatively low on Digit Span and Coding. On Picture Arrangement, Block Design, Picture Completion, and Object Assembly, retarded readers often score relatively high.

Each subtest should be examined for its significance to the teaching of reading. A low score on the Information test might indicate a child's lack of mental ability to gain information as normal children do. Or it might reflect lack of reading experiences, the means by which children in our culture gain much of their basic information. Both the Information and Arithmetic subtests are closely related to school learning.

The Coding subtest involves visual discrimination and memory abilities that are also required in decoding printed words. We expect retarded readers to score low on this test.

The Digit Span subtest requires a mental ability somewhat similar to that involved in getting the meaning of a sequence of words arranged in a sentence. A low score on this subtest may indicate that the individual has a short attention span, difficulty in concentration, or the habit of reacting slowly to any stimulus that involves visual motor skills.

The two subtests on which retarded readers generally scored relatively high are Block Design and Picture Completion. These measure the subject's response to concrete and semi-concrete stimuli. These tasks are less abstract than those set by other subtests in the WISC. Poor readers, as a group, tend to approach a learning

situation in a more concrete way than good readers; they are less able to handle abstractions.

It is reasonable to assume that the WISC can become a useful instrument in the hands of the reading specialist who is familiar with its subtest profiles characteristic of the retarded reader. The foregoing research strongly supports the view that the profiles of WISC subtests and clusters of subtests appear to be associated with reading retardation. By knowing which subtest scores are associated with reading strengths and weaknesses, one may then be able to design a reading program which will capitalize on areas of high ability and strengthen areas of weakness.

APPENDIX C

SKILL DEVELOPMENT MATERIALS AND BOOKLIST

## SKILL DEVELOPMENT MATERIALS

Bremner-Davis Phonics, Inc.  
161 Green Bay Road  
Willmette, Illinois

Imperial International Learning Inc.  
Box 548 Kankakee  
Illinois 60901

Holt, Rinehart and Winston of  
Canada Limited

Ideal School Supply Company  
Oak Lawn, Illinois 60453

Lyons and Carnahan Inc.  
407 E. 25th Street  
Chicago, Illinois 60616

Benefic Press  
1900 North Narragansett  
Chicago, Illinois 60639

Bureau of Publications  
Teachers College  
Columbia University  
New York, New York 10027

The Continental Press Inc.  
367 S. Pasadena Ave.  
Pasadena, California 91105

Garrard Publishing Co.  
1607 No. Market Street  
Champaign, Illinois 61820

Reader's Digest Services, Inc.  
Pleasantville, New York 10570

The Sound Way to Easy Reading  
Second Edition

Learning the Consonant Blends  
With Amos and His Friends

Tracing Our Letters

Ideal Print - Script Word Builder  
Sets I and II

Vowel Dominoes

Phonics Book I  
Phonics Book II  
Phonics Book III

Standard Test Lessons in Reading  
(McCall-Crabbs)  
Book A

Liquid Duplicator Workbooks -  
Reading-Thinking Skills

What The Letters Say  
Basic Sight Vocabulary (Sets 1 & 2)  
Picture Word Cards (95 commonest nouns)  
Sight Phrase Cards  
A Sound Matching Game  
Vowel Cards  
Consonant Cards  
Vowel Lotto

Reader's Digest Skill Builders  
Level I Parts A, B, 1 & 2

Reader's Digest Skill Builders  
Levels 2-6 Parts 1, 2 & 3



Science Research Associates, Inc.  
259 East Erie Street  
Chicago, Illinois 60611

Reading Laboratory 1A  
Reading Laboratory 1B  
Reading Laboratory 1C

Webster Publishing Division  
McGraw-Hill, Inc.  
Manchester Road  
Manchester, Missouri 63011

New Practice Readers  
Books A, B, C and D

Treasure Books, Inc.  
1107 Broadway, New York 10  
New York

The Practice Workbook of Spelling  
Grades 2, 3, 4 & 5

Gage Educational Publishing Ltd.  
Toronto, Ontario

Stott's Programmed Reading Kit 1  
Stott's Programmed Reading Kit 2

### Tests

Slosson Educational Publications, Inc.  
140 Pine Street,  
East Aurora, N.Y.

Slosson Oral Reading Test

The Psychological Corporation  
304 East 45th Street  
New York, N.Y. 10017

Wechsler Intelligence Scale  
for Children

Webster Publishing Company  
Toronto, Canada

Kottmeyer's Diagnostic Spelling Test

Garrard Publishing Co.  
1607 No. Market Street  
Champaign, Illinois 61820

Dolch Sight Word Test

### BOOKLIST

Publisher	Series	Interest Level (Grade)
Benefic Press Chicago, U.S.A.	Cowboy Sam Series	pp - 6
	Dan Frontier Books	pp - 6
	Sailor Jack Series	pp - 3
Garrard Publishing Company Champaign, Illinois	The First Reading Book Series	0 - 1
	The Basic Vocabulary Series by E.W. Dolch	1 - 3
	Pleasure Reading Series by E.W. Dolch	1 - 6

Publisher	Series	Interest Level (Grade)
Field Educational Publications, Inc. Portland, Oregon, U.S.A.	Jim Forest Readers	1.7 - 3.1
Xerox, Education Publishing Education Center One Adam Street Kitchener, Ontario	The Reading Success Series Score: (6)	1 - 6
Methuen Publications Division of the Carswell Company Limited 2330 Midland Avenue Ontario, Canada M1S 1P7	Methuen's Resources for Reading	p - 6
The Ryerson Press Toronto	The Ryerson Readers	1 - 6
Stanwick House, Inc. Pittsburg, Pennsylvania	Functional Basic Reading Series	1 - 6
Science Research Associates (Canada) Ltd. Don Mills, Ontario	SRA Basic Reading Series SRA Comprehensive Reading Series	1 - 3 1 - 6
W. J. Gage Limited Toronto	The New Basic Readers Language Experience Reading Program	1 - 6 1 - 3
Scholastic Book Services Richmond Hill, Ontario	Individualized Reading Series from Scholastic	1 - 6
Dell Publishing Co. Inc. 750 Third Avenue New York, New York 10017	Yearling® Individualized Reading Series	1 - 3
Bowmar Publishing Co. 622 Rodier Drive Glendale, California 91201	Bowmar Primary Reading Series	0.5 - 3.5
E.J. Arnold & Son Ltd. Leeds	The Griffin Readers	1 - 3
Louise Koal & Son Ltd. 132 Sunrise Avenue Toronto 16, Ontario	Veri-Tech Vocabulary Workbook Reading Series	1 - 6







